San Marcos Transportation Master Plan

a presentation to the

San Marcos City Council

November 4, 2002

prepared by

ENGINEERS
PLANNERS
ECONOMISTS

Wilbur Smith Associates

Presentation Outline

- Project Team Experience
- Project Approach
- Project Schedule
- Questions

Project Team

- *Lead Firm/Overall Project Management*
- *Travel Demand Modeling*
- *Master Plan Development*

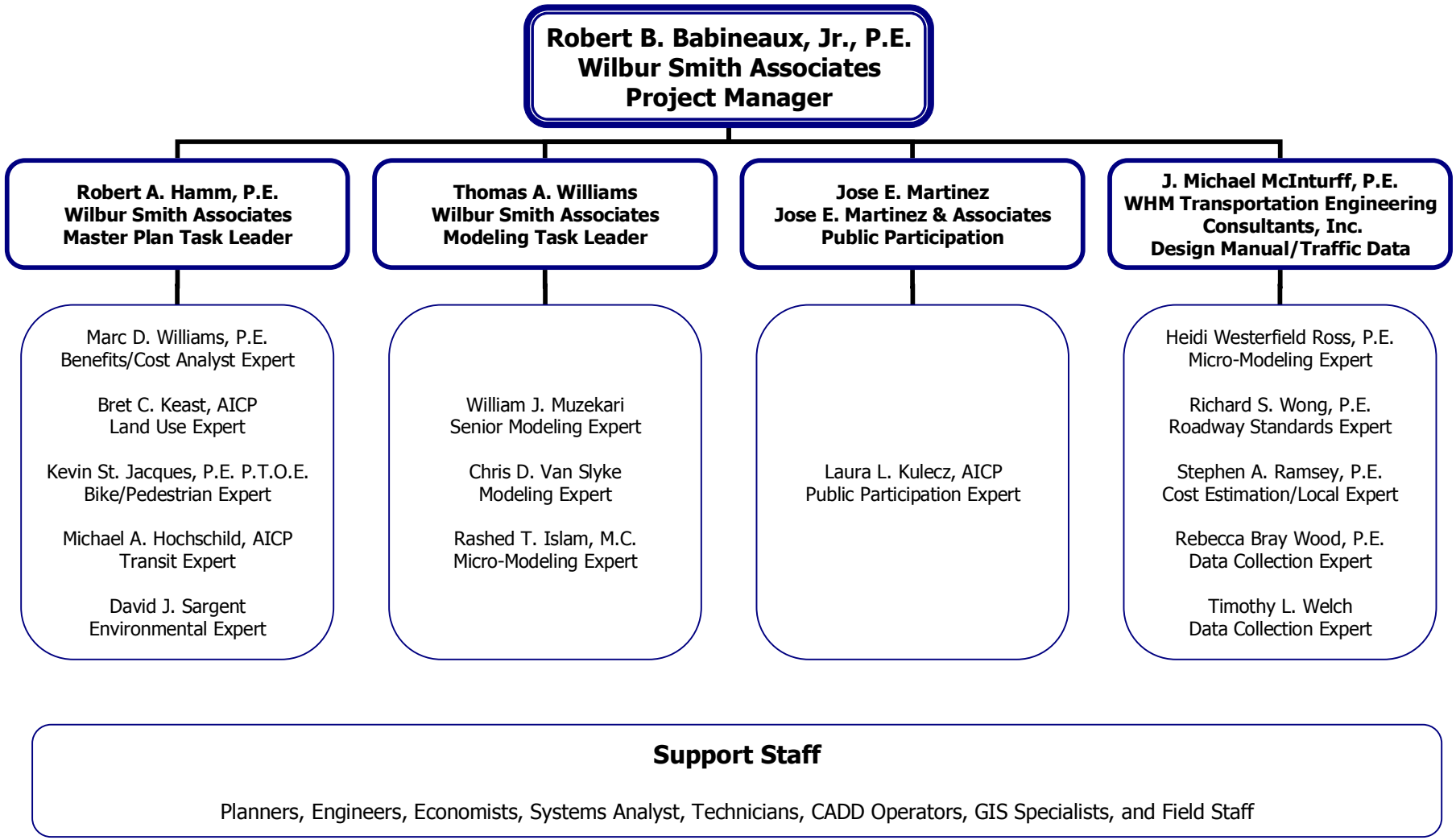
- *Data Collection*
- *Corridor Analysis*
- *Design Manual*

- *Local Coordination/Issues*
- *Cost Estimates/Design Manual*

Jose E. Martinez & Associates

- *Public Involvement*

Program Organization



Project Manager Experience
Butch Babineaux, P.E.

- 19 Years Transportation Engineering/Planning Experience
- Specializes in Transportation Plans and Corridor Feasibility Studies
- Managed over 15 Transportation Plans in TX, LA, NM, and OK
- Registered P.E. in Texas and Four Adjacent States
- Extensive TxDOT and Local Governmental Agency Experience
- Outstanding Performance and Award Winning Projects
- Immediately Available

Project Manager Transportation Plan Experience

- Victoria Master Thoroughfare Plan
- Shreveport Transportation Plan
- Lafayette Transportation Plan
- Clovis/Portales Transportation Plan
- Baton Rouge Comprehensive Plan
- Harlingen Transportation Plan
- Beaumont/Port Arthur MTP Update
- New Orleans Riverfront/CBD Transportation Plan
- Downtown Bossier Master Plan
- Huntsville Transportation Plan
- Fort Hood Transportation Plan

Travel Demand Modeling Task Leader Experience

Tom Williams

- 15 Years Travel Demand Modeling Experience
- TransCAD Expert
- Programming (VB, GISDK)
- Built SH 130 Super Regional Model for TTA
- Expanded CAMPO Model to Hays County
- Spearheaded TransCAD Implementation with TxDOT for Statewide MPO Use
- Located in Austin

Project Experience: Huntsville Transportation Plan

Similarities to San Marcos

- Population 37,000
- Sam Houston State University
- IH 45 Through Center of Town
- Special Generators
- New TransCAD Model
- Public Involvement Program
- Design Standards
- Prioritized Implementation
- Transit, Bicycle, Pedestrian Elements
- Cost Estimates

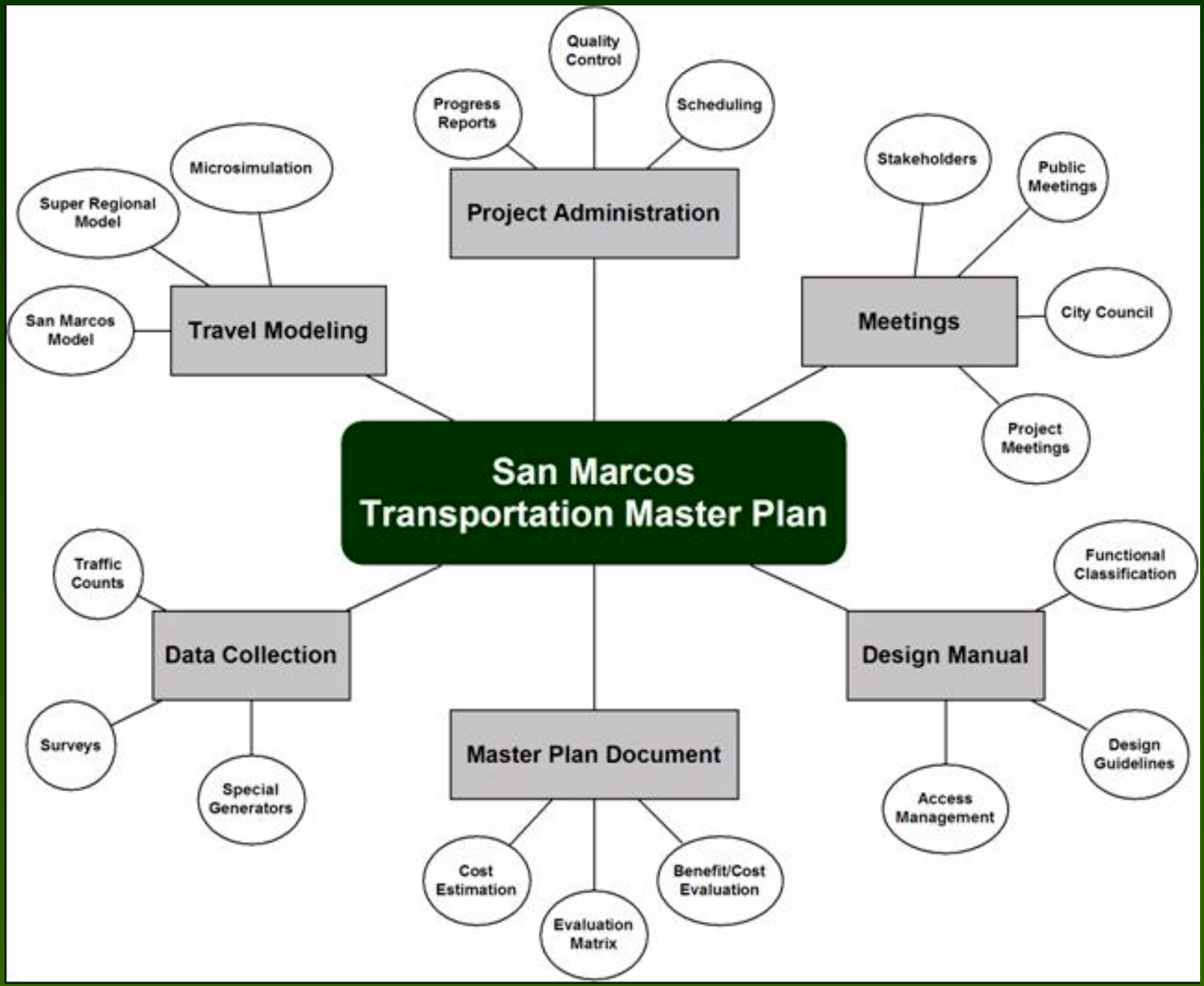
Project Experience: Downtown Austin Mobility Plan

- Same Team Members
- CORSIM/SYNCHRO Modeling
- Urban Area Data Collection
- Intersection Operational Improvements
- Extensive Stakeholder Involvement
- Pedestrian, Bicycle, and Transit Elements
- Application of Evaluation Criteria
- Consideration of IH 35 Impacts

Award Winning Projects

- Bastrop Comprehensive Plan
- Lockhart Comprehensive Plan
- Kerrville Comprehensive Plan
- Shreveport/Bossier City Transportation Plan
- Baton Rouge Comprehensive Plan
- LBJ Freeway Managed Lanes Traffic and Revenue Study

Work Program



Transportation Issues

- Congested Areas (Hopkins St, Post Rd, RM 12, IH 35)
- Proposed Improvements (San Marcos Loop FM 110 and Wonder World Drive Extension)
- Edwards Aquifer Recharge Zone
- Growth Primarily in South and East
- SWTSU Parking, Commuting, and Transit Issues
- At-grade Railroad Crossings (Hopkins, Guadalupe, CM Allen, Wonder World Drive)
- San Marcos River Corridor Ordinance
- Alternative Transportation Modes
- Special Generators (Outlet Malls, Downtown, University, Medical Center)

Principles of Developing the Transportation Master Plan

- Traffic Service
- Maximum Use of Existing Network
- Network Continuity
- Systems Relationships
- Land Access
- Growth Potential

Elements of the San Marcos Plan

- Map of Transportation Recommendations
  - Future Functional Classification
  - Future Roadways and Extensions
  - Required Right-of-Way Needs
  - Bicycle and Pedestrian Improvements
  - Transit System Needs
- Recommended Design Standards
  - Right-of-Way and Pavement Widths
  - Desired Number and Width of Lanes
  - Type and Width of Medians
  - Border Area Widths
- Implementation Program
  - Construction Costs
  - Prioritization of Improvements
  - Responsible Agencies/Funding Sources

Methods and Criteria

- Qualitative Evaluation
  - Social Impacts
  - Stakeholder Involvement
  - Environmental Impacts
- Quantitative Evaluation
  - Data Collection
  - Capacity/LOS Analysis
  - Travel Demand Modeling/Forecasts
  - Costs
  - Design/Construction Elements

Public Input

- Early, Continuous, and Proactive Public Involvement
- Understand Community Vision and Goals
- Public Outreach Activities:
  - TAC Meetings (4)
  - Stakeholder Committee (4)
  - Bike/Ped Advisory Committee (3)
  - Public Meetings (3)
  - Website
  - SWT Surveys

Engineering Practices and Capacity Analysis

- Standard Engineering Practices:
  - Highway Capacity Manual
  - AASHTO Green Book
  - TxDOT Design Manual
  - Texas MUTCD
- Available Software Tools:
  - SYNCHRO, CORSIM, VISSIM
  - PASSER, HCS

Engineering Practices and Capacity Analysis

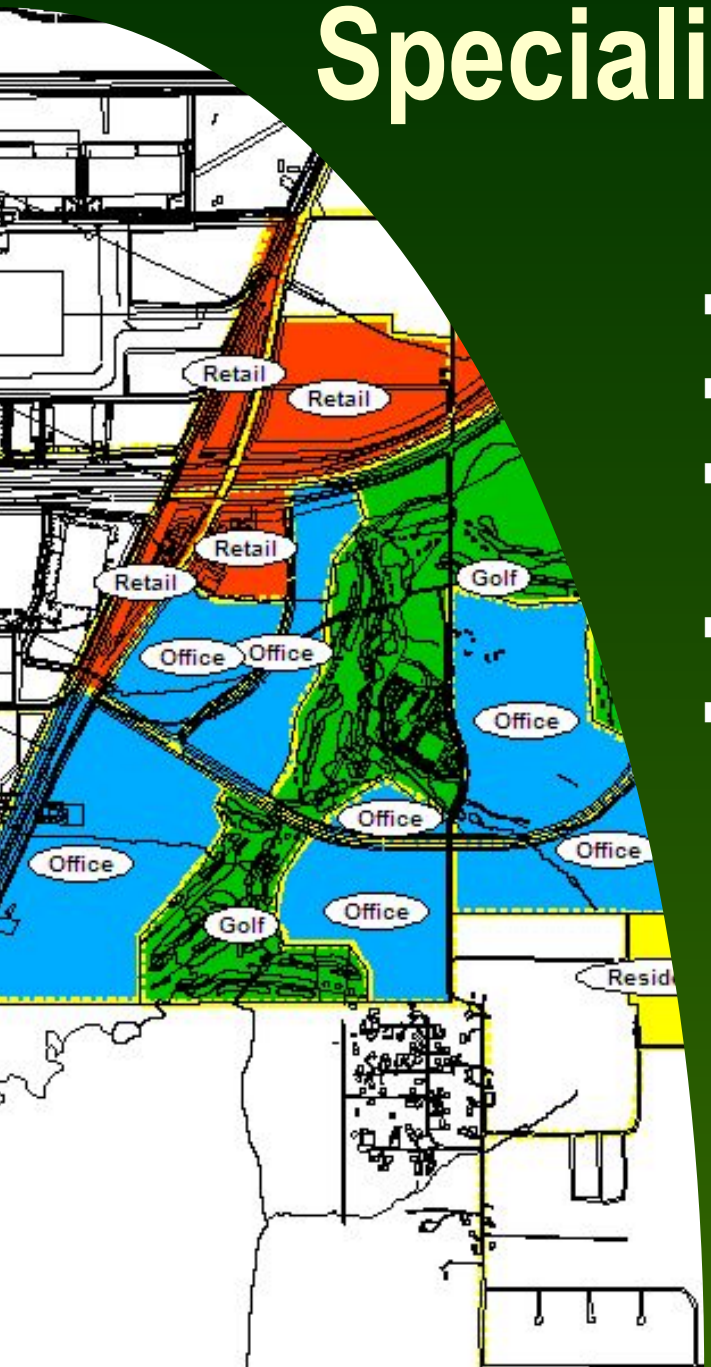
- Capacity Analysis:
  - Use HCM Procedures
  - Volume-to-Capacity Ratios
  - Delay at Signalized Intersections
  - Determine LOS
- Measures of Effectiveness:
  - Level-of-Service
  - Vehicle Miles Traveled (VMT)
  - Vehicle Hours Traveled (VHT)
  - Travel Speed/Time

Prioritizing Future Multimodal Projects

- Prioritization Ranges
  - Short Term (<5 Years)
  - Intermediate (5 to 10 Years)
  - Long Term (10 to 25 Years)

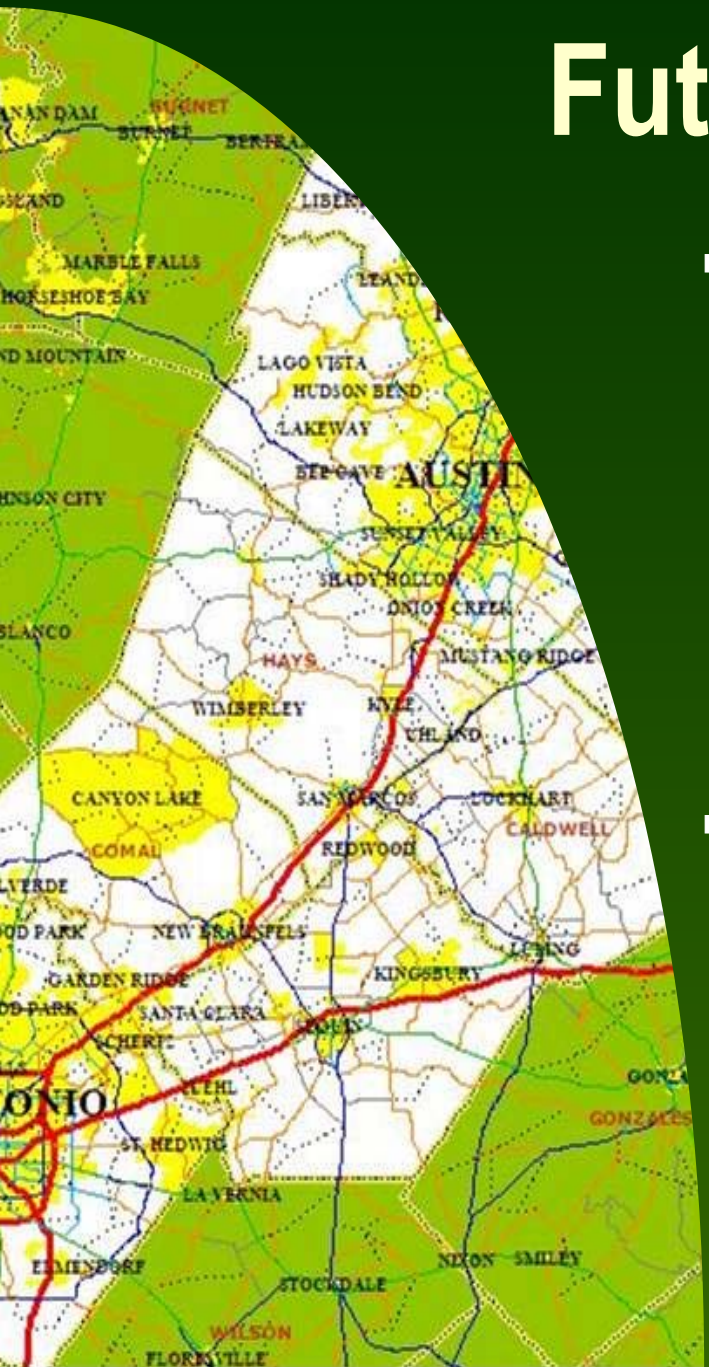
- Prioritization Factors
  - Ease/Cost of Implementation
  - Environmental Impacts
  - Need Based on Current and Future Traffic Demands
  - System Continuity
  - Cost Effective Solutions
  - Financial Constraints

Specialized TransCAD Model



- Mathematical Model
- Computer Simulation
- Evaluate Transportation Scenarios/What if?
- Projects Future Travel Demands
- Answers 4 Questions:
  - How Many Trips?
  - Where do They Go?
  - What Mode (Auto/Bus)?
  - What Route?

Future Travel Forecasts

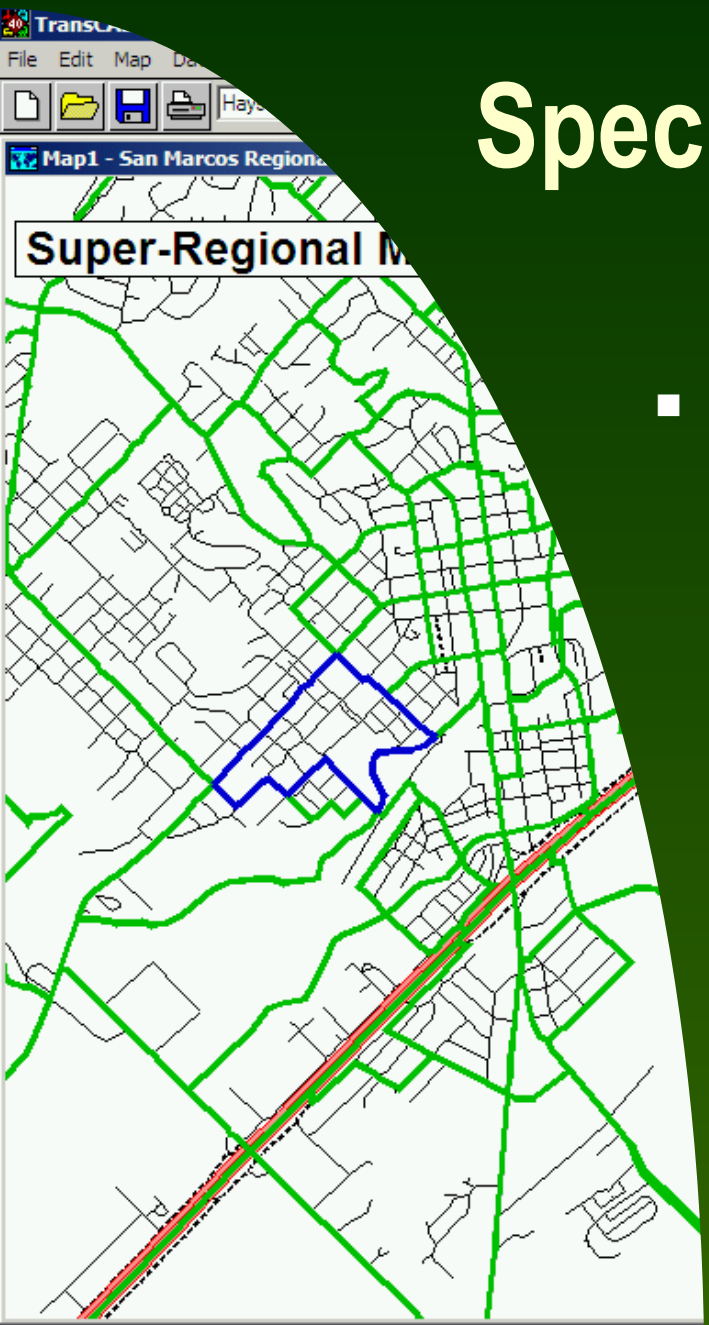


- Reason for Models
  - More than Just Numbers
  - Framework for City Planning
  - City Provided Inventory/Demographics
  - Primary Tool for Evaluating Future Needs
- Traffic Projections
  - Baseline – Calibrate/Validate to Current Year
  - 5 Year
  - 10 Year
  - 25 Year

Modeling Methods

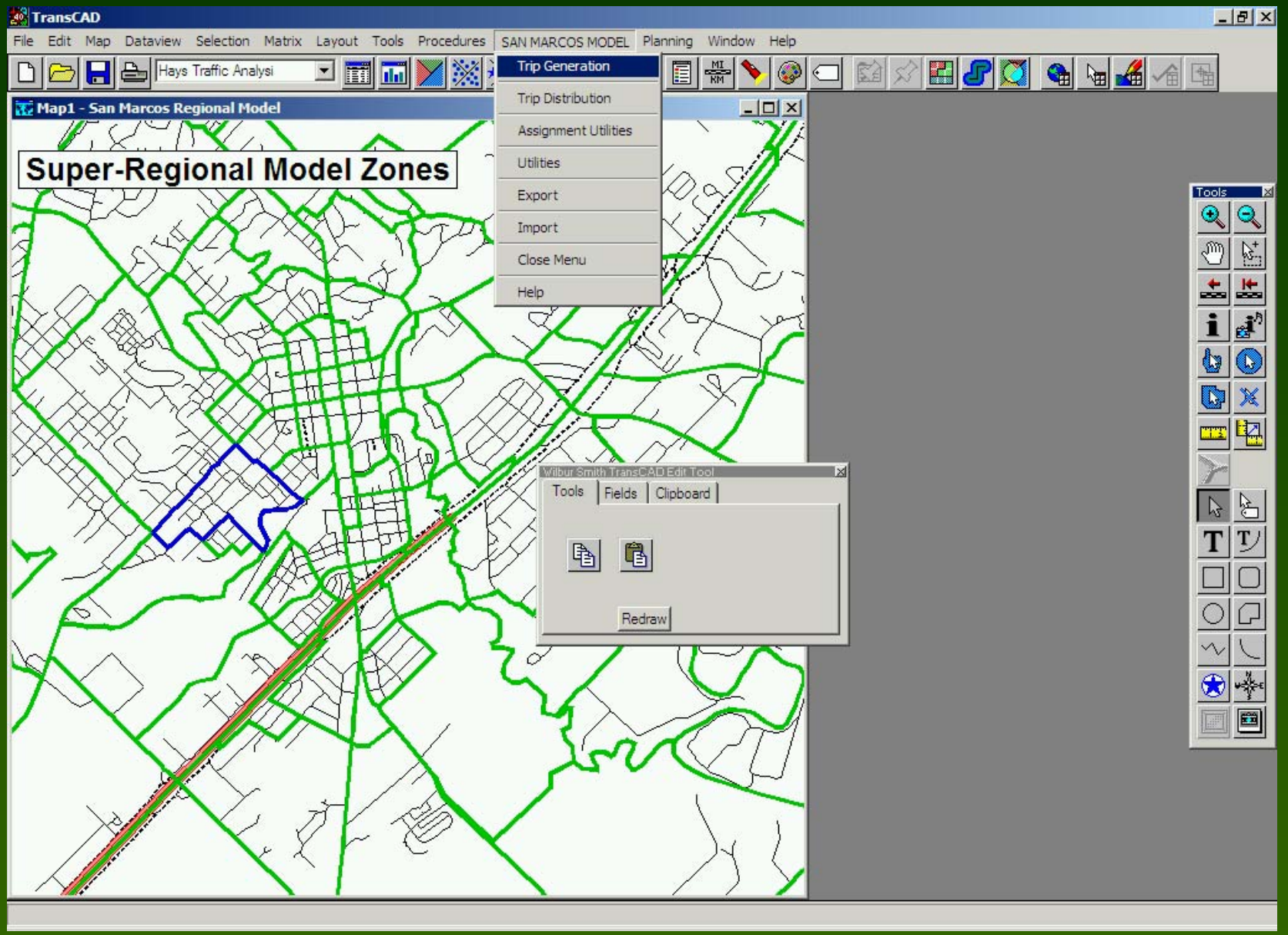
- TransCAD
- Three Levels
  - Super Regional Model – Includes Austin/San Antonio Region
  - City Wide Model – Includes San Marcos ETJ
  - Micro Model – Corridor Specific Simulations

Specialized TransCAD Model

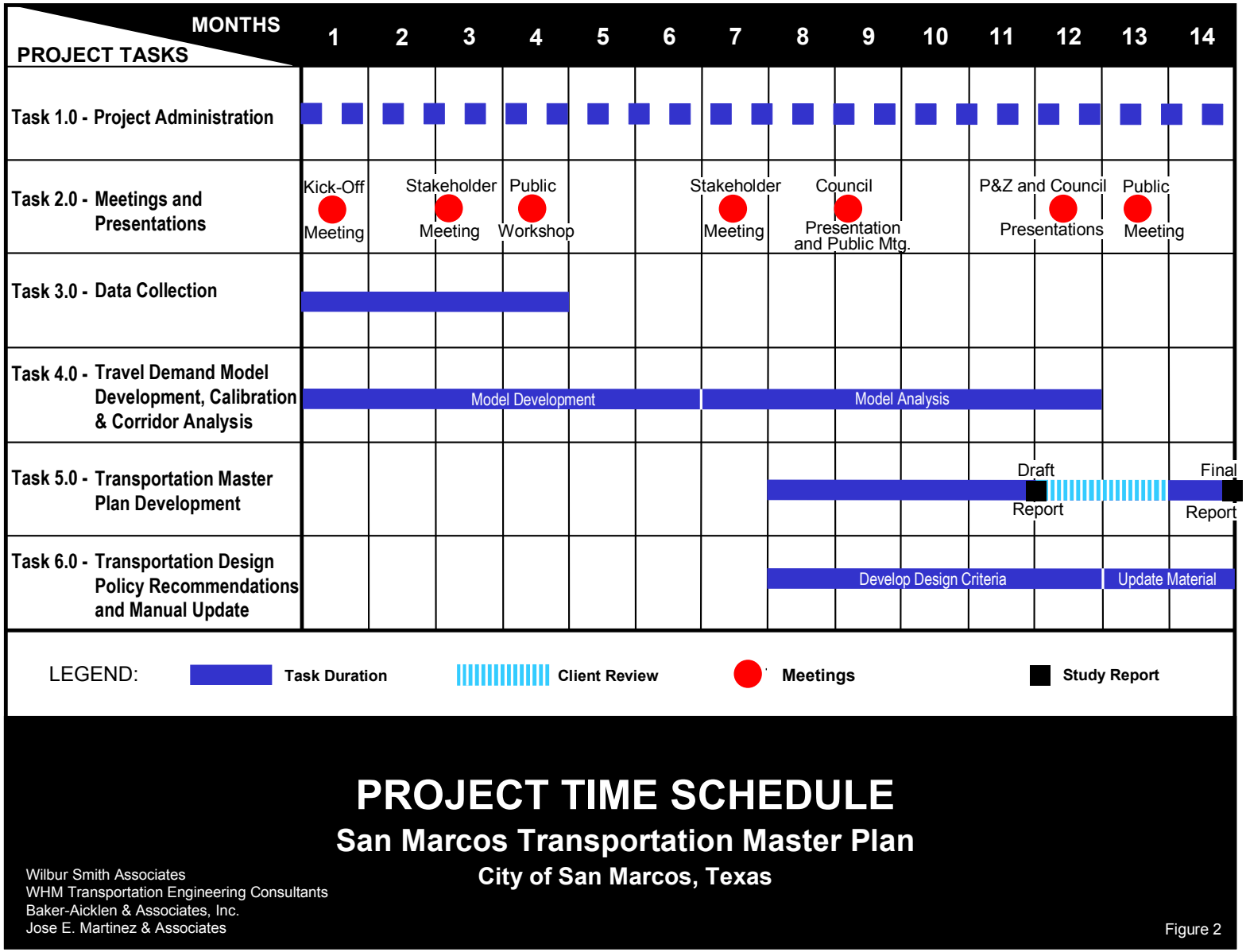


- Tailored for San Marcos
  - Special Generators
  - Includes City Collector Streets
  - Integrated with Regional Model to Account for External Trips
  - San Marcos User Interface

User Friendly TransCAD Model



Proposed Project Schedule



PROJECT TIME SCHEDULE

San Marcos Transportation Master Plan

City of San Marcos, Texas

Wilbur Smith Associates
WHM Transportation Engineering Consultants
Baker-Aicklen & Associates, Inc.
Jose E. Martinez & Associates

Figure 2

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Why Select WSA Team?

- Most Qualified Team
- Experienced PM and Senior Personnel
- Local Knowledge
- Successful Relationships
- Multidisciplinary Approach
- TransCAD Expertise
- Extensive Staff Resources Located in San Marcos and Austin
- Key Personnel Immediately Available

Ability to Meet Schedule

- Extensive Team Resources
- Immediately Available
- Extensive Experience with Transportation Plans
  - *Clearly Define Project Objectives*
  - *Identify Issues Early*
- Nearby Presence in San Marcos and Austin for Immediate Response

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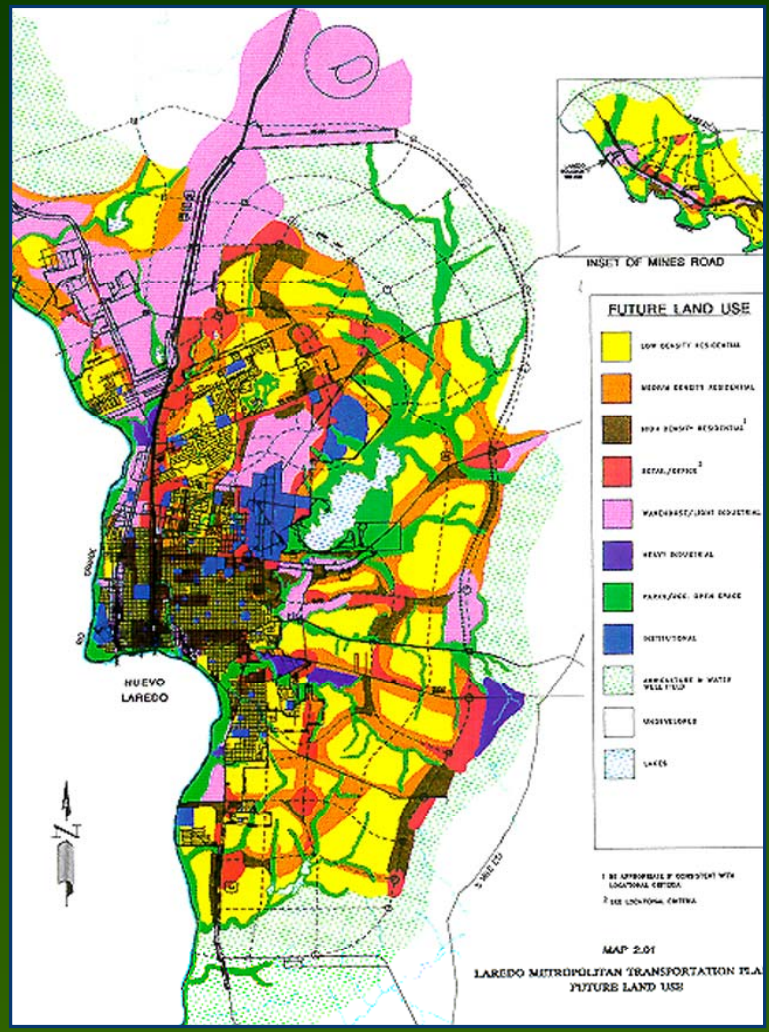
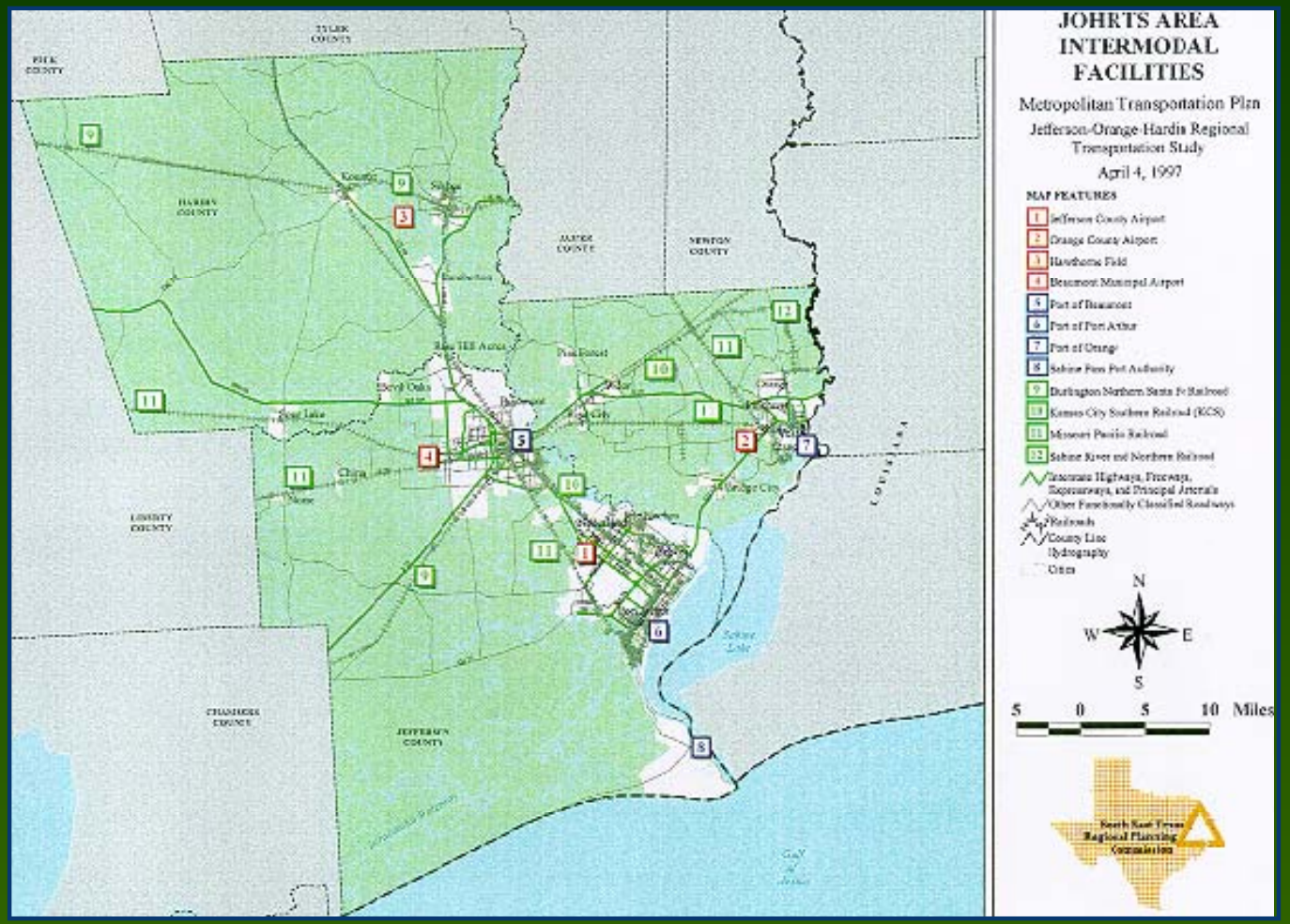
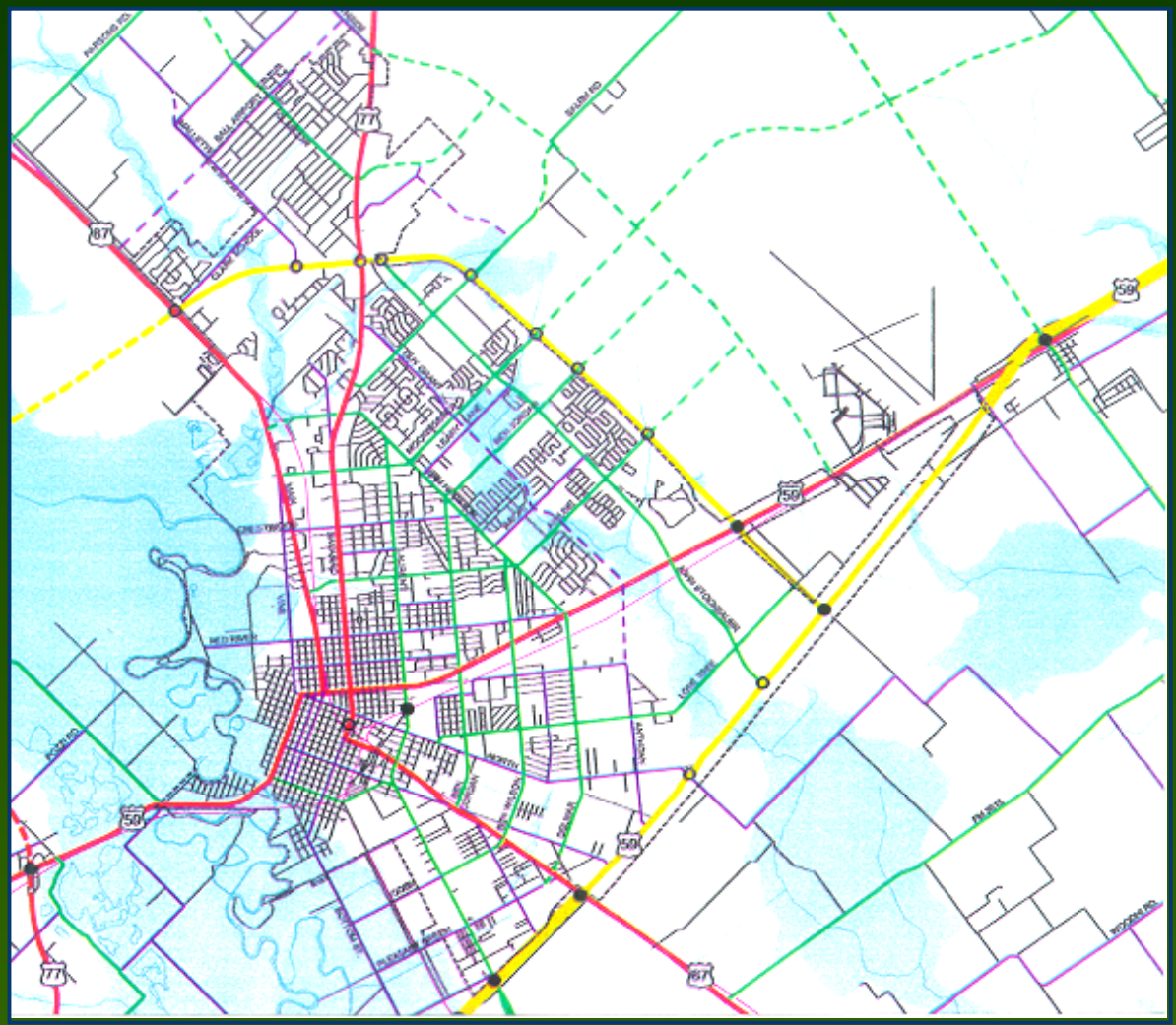
Laredo Metropolitan Transportation Plan



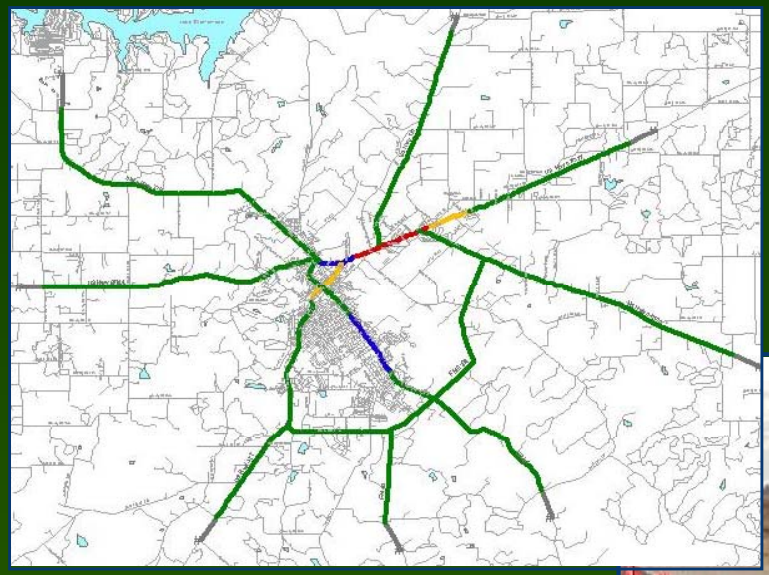
JOHRTS Metropolitan Transportation Plan Update - 2025



Victoria Thoroughfare Master Plan



Brownwood-Early Loop Feasibility Study



Wichita Falls Socioeconomic Data Collection and Forecast

Special Generator Studies

- H-GAC Special Generator Program
  - *Memorial Park*
  - *Galveston Island*
  - *Gulf Greyhound Park*
  - *Hobby Airport*
  - *Bush Intercontinental Airport*
- University Transportation Studies
  - *University of Texas Medical Branch – Galveston*
  - *Southwest Texas State University*
  - *University of Houston*